

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: : Conf. No.: 9053
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Mary A. Reppy et al. :
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Serial No.: 09/811,538 : Art Unit: 1641
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Filed: March 20, 2001 : Examiner: Tran, My-Chau
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For: METHOD FOR DETECTING : Atty Docket: 22001/0005
AN ANALYTE BY
FLUORESCENCE
:
:
:

Declaration under 37 CFR 1.132

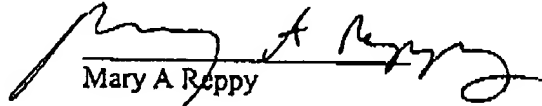
I, Mary A Reppy, hereby state:

1. My educational background, relevant employment history and professional background are recited in my curriculum vitae attached to this declaration as Attachment 1.
2. I am one of the named inventors of the above-identified U.S. Patent application.
3. I have reviewed the above-identified U.S. Patent application, the Final Office Action dated October 21, 2003, along with U.S. Patent 5,415,999 to Saul et al., U.S. Patent 6,180,135B1 to Charych et al. and Reichert et al., Polydiacetylene Liposomes Functionalized with Sialic Acid Bind and Colorimetrically Detect Influenza Virus, J. Am. Chem. Soc., 1995, 117:829-830.
4. Although 3-dimensional arrays comprising a polydiacetylene backbone and a substrate were known prior to the present invention as evidenced by U.S. Patent No. 6,180,135 B1 to Charych et al., to the best of my knowledge, such 3-dimensional arrays had not been used or disclosed as being useful, at a time prior to the present invention, in a method for detecting an analyte in a sample by detecting a change in fluorescence as recited in the claims of this application under consideration.
5. U.S. Patent 6,180,135 B1 to Charych et al. does not relate to using fluorescence but instead relates to a method that monitors color change of a three-dimensional array of a polydiacetylene backbone. Nothing whatsoever in Charych et al., would suggest that the three-dimensional arrays therein could be used in a method that detects the change in fluorescence of the three-dimensional arrays.

6. Also, nothing in either U.S. Patent No. 6,180,135 B1 to Charych et al or U.S. Patent No. 5,415,999 to Saul et al. would suggest that a change in fluorescence, if any, from a blue to red form of a three-dimensional array of a polydiacetylene backbone would be of sufficient magnitude for the purpose of detecting analytes.

7. All statements made herein of my own knowledge are true. All statements made on information and belief are believed to be true. These statements were made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under 18 U.S.C. 1001 and may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,


Mary A Reppy

12/20/03

ATTACHMENT 1

ANALYTICAL BIOLOGICAL SERVICES INC. • 701-4 CORNELL BUSINESS PARK • WILMINGTON DE
19801
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MARY A REPPY

EDUCATION

1989 - 1994 Cornell University Ithaca, NY

PhD (1994); MS (1991)/Chemistry

- Doctoral thesis research on the synthesis and physical-organic properties of polycyclic aromatic and anti-aromatic biphenylene derivatives
- Dissertation: "Studies Towards the Syntheses of Cycloocta[1,2,3,4-def]cyclobuta[6,7]biphenylene and Benzo[def]biphenylene"
- Awarded two U.S. Department of Education Fellowships for 1991-1992 and 1992-1993

1983 - 1987 Massachusetts Institute of Technology Cambridge, MA
BS/Chemistry

- Research on the derivatization and crystallization of hemoglobin

PROFESSIONAL EXPERIENCE

1999 - Present Analytical Biological Services Inc. Wilmington, DE

Senior Research Chemist (8/99-12/01);

Director of Chemical Research (1/02-present)

- Leads the research efforts on fluorescent polymer bio-sensing materials; Principal investigator on research grants
- Synthesizes and prepares new sensing materials
- Developed bio-assays utilizing the switchable fluorescence properties of polydiacetylene
- Discovered new method for preparing polydiacetylene coatings on nano-porous filters

1997 - 1999 University of California, Berkeley Berkeley, CA

Postdoctoral Fellow and Visiting Researcher

- Devised and carried out modular syntheses for a new family of polymerizable lyotropic liquid crystals with controlled nano-dimensions in the inverse hexagonal phase.
- Developed fluorescent imprinted polymers for the detection of β -estradiol

PROFESSIONAL EXPERIENCE CONT

- 1994 - 1997 **SRI International** Menlo Park, CA
Postdoctoral Fellow; Polymer & Electrochemistry Technology Center
- Designed transition metal impregnated polymer coatings for surface acoustic wave sensors for chemical warfare agent (CWA) detection
 - Developed fluorescent imprinted polymers for CWA detection
 - Synthesized polymer electrolyte films for fuel cell and battery applications
- 1987 - 1989 **Cornell University** Ithaca, NY
Technician; Biochemistry Department
- Synthesized spin-labelled and fluorescent fatty acids
 - Synthesized phosphatidylcholines with specific fatty acids for use in model membrane phase studies

PUBLICATIONS

- "Signal Generation from Switchable Polydiacetylene Fluorescence", Reppy M.A. *Mat. Res. Soc. Symp. Proc.* 2002, 723, 05.9.1-05.9.6.
- "A New Family of Polymerizable Lyotropic Liquid Crystals: Control of Feature Size in Cross-linked Inverted Hexagonal Assemblies via Monomer Structure", Reppy M.A., Gray D.H., Pindzola B.A., Smithers J.L., Gin D.L., *J. Am. Chem. Soc.* 2001, 123(3), 363-371.
- "A Novel Fluorescent Monomer for the Selective Detection of Phenols and Anilines", Reppy M.A., Cooper M.E., Smithers J.L., Gin D.L., *J. Org. Chem.* 1999, 64, 4191-4195.

PRESENTATIONS

- "Signal Generation from Switchable Polydiacetylene Fluorescence"; Reppy M. A., Materials Research Society 2002 Spring Meeting, 4/3/02, San Francisco CA.
- "Polymer-Fluorophore Energy Transfer for Signal Amplification in Sensing Liposomes"; Reppy M. A., Society for Biomolecular Screening 7th Annual Conference, 9/13/01, Baltimore MA.
- "Molecular Imprinting via a Novel Mixed Acetal Linker", Reppy M.A., Gin D.L., American Chemical Society 216th National Meeting, 8/98, Boston MA.
- "Detection of Chemical Warfare Mimics, A Polymer Approach", Reppy M.A., invited talk at the California State University, Fresno, Chemistry Dept, 9/16/97, Fresno CA.

M.A. Reppy

"Acoustic Detection of Thiodiethanol with Polymer Bound Transition Metal Complexes", Reppy M.A., Liu S., Ventura S., American Chemical Society 211th National Meeting, 3/96, New Orleans LA.

"Generation and Reaction of (Z)-1,2-Bis(2,3-benzynyl)ethane", Reppy M.A., Wilcox C.F., American Chemical Society 209th National Meeting, 4/95, Anaheim CA.